

REMARKS/ARGUMENTS

Entry of this response and reconsideration and allowance of the above-identified patent application are respectfully requested. Please note that a supplemental information disclosure statement (SIDS) has been filed concurrently with the present response. The Examiner is respectfully requested to consider and initial the cited references.

The Examiner is also respectfully requested to consider and initial the cited references on page 4 of 25 of the Information Disclosure Statement filed August 2, 2004.

Formal drawings were filed as part of the original application. The Examiner is respectfully requested to acknowledge receipt and acceptance of the drawings as formal as previously filed.

This application is a continuation under 37 CFR § 1.53(b) of U.S. Patent Application No. 10/436,779 filed May 13, 2003 and this application is also a continuation-in-part under 35 U.S.C. §120 and claims priority to U.S. Patent Application No. 10/315,725 filed December 10, 2002. Examiner is respectfully requested to acknowledge priority in the next communication.

Claims 1-46 are currently pending in this application. By this amendment, claims 13, 15, 17, 29, 34, 35, 37, 38 and 43 are amended. No claims have been added or canceled. No new matter is added. Applicant respectfully submits that, upon entry of the subject amendment, the application will be in condition for allowance. Applicant, thus, respectfully requests consideration of the above amendment and following remarks.

Claim 1-4, 6-20 and 22-27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,172,97 to Brown ("Brown"). Claims 5 and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Brown in view of U.S. Patent No. 6,172,597 to Williams *et al.* ("Williams"). Claims 1-46 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Application No. 2004/0135676 to Berkman *et al.* ("Berkman").

Claims 13 and 15 have been amended to remove a redundancy. Claims 29 and 43 have been amended to further recite the feature that the received data be transmitted to a user device disposed at the customer premises. Claim 35 has been amended to claim that the transmission of the data from the second PLC device is in a different frequency band than that of the first data signal. Claim 37 has been amended to claim that the transmission to the user device is via a low voltage power line. Claims 34 and 38 have been amended to correct clerical errors.

Applicant would like to thank Examiner Lieu for conducting an in-person interview with applicant's representative. Applicant and Examiner Lee discussed the disclosure of the art relied upon in the office action in comparison with the claimed invention. The interview was helpful in facilitating and progressing the prosecution of the present application.

Briefly, the present invention communicates data signals via medium voltage power lines. As discussed with the Examiner, however, communications transmissions only travel a relatively short distance over power lines because they are attenuated by the characteristic impedance (high loss) of the power lines at broadband frequencies. It has been discovered that the high frequencies used to

communicate the data signals cause the data signals to cross-couple between overhead parallel power line conductors. By taking advantage of the cross-coupling of the data signals between power line conductors, the invention provides a method of coupling the power line communications devices to the medium voltage power line conductors that enhances communications.

In one embodiment, the invention comprises a first device and second device coupled to the same power line conductor. A third device is coupled between the first and second devices, but on a different power line conductor. Because the third device is on a different power line conductor than that of the first and second devices, its adverse affect on (e.g., attenuation of) communications between the first and second devices is substantially reduced. In another embodiment, communications transmitted from a first device on a first power line conductor are received by a second device on a second power line conductor wherein the data signals couple between the two devices via the air. The data is then transmitted to a user device disposed at the customer premises such as, for example, via the low voltage power lines.

Independent claim 17 has been amended to more clearly claim that the power line conductors are overhead conductors that travel in a substantially parallel physical arrangement and in a spaced-apart relation. This limitation is now present in all independent claims.

Independent claims 1, 17 and 27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Brown. Specifically, the office action cites Figure 2 of Brown, which is "a schematic diagram" of a transmission system. See Brown at Col.

5, line 20. As discussed in the interview, the schematic diagram does not teach the arrangement of PLC devices as claims. In addition, while the schematic diagram depicts multiple conductors drawn in parallel, because it is a schematic, it does not disclose conductors in spaced-apart relation as recited by the claims.

In Figure 5a Brown does disclose a power line cable in which the power line phase conductors (56, 58, and 60) are bundled together in one cable. Such a cable is for use in underground electrical systems and does not disclose power line conductors in spaced apart relation as claimed. Thus, the disclosure of Brown does not disclose any placement of power line devices on overhead power line conductors in spaced apart relation.

In addition, Brown does not disclose coupling power line devices to overhead power line conductors as required by the independent claims. The only mention of overhead power lines is in the background section at Col. 1, lines 37-38 and lines 54-56. Applicant submits that the system disclosed by Brown is in the context of underground power lines. This fact is supported throughout Brown such as, for example, at Col. 2, lines 37-44 (invention is "for input of the telecommunications signal ... onto the network (e.g., an underground electricity transmission and/or distribution network)" ...), at Col. 3, lines 1-3 ("Preferably the power network is a major underground power network...."), and elsewhere.

In addition, and as indicated in the office action, Brown fails to disclose a first device and second device coupled to the same power line conductor and a third device coupled between the first and second devices, but on a different power line conductor. However, this arrangement is not simply a design choice as alleged by

the office action, but results in communications enhancements. As one example of the provided enhancements, the through loss of the third device that impacts communications between the first and second devices is substantially reduced because the third device is on a different conductor than that of the first and second devices.

Therefore, Brown fails to teach or disclose the arrangement of PLC devices as claimed in claims 1-28, fails to disclose PLC devices on overhead power lines, and fails to disclose PLC devices on power lines in spaced apart relation. Accordingly, Applicant respectfully asserts that independent claims 1, 17 and 27 are patentable over Brown and respectfully requests allowance of claims 1, 17 and 27, and claims 2-16, which depend from claim 1, and claims 18-26, which depend from claim 17.

In addition, claims 1-46 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Berkman. Applicant has submitted a declaration under 37. C.F.R. § 1.132 to establish that any invention claimed in the present application that is disclosed in Berkman, was derived by Mr. Mollenkopf, the inventor in the present application. Consequently, Applicant submits that the rejection of claims 1-46 under 35 U.S.C. § 102(e) has been overcome and that all claims are in condition for allowance.

DOCKET NO.: CRNT-0206
Application No.: 10/675,409
Office Action Dated: August 24, 2004

PATENT


CONCLUSION

In view of the foregoing, applicant respectfully submits that the claims are allowable and that the present application is in condition for allowance.

Reconsideration of the application and an early Notice of Allowance are respectfully requested. In the event that the Examiner cannot allow the present application for any reason, the Examiner is encouraged to contact the undersigned attorney, Vincent J. Roccia at (215) 564-8946, to discuss resolution of any remaining issues.

Date: December 27, 2004

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